

Book Review

LUNDQUIST J.E. and HAMELIN R.C. (eds.).

Forest Pathology: From Genes to Landscapes

APS Press – The American Phytopathological Society, St. Paul, Minnesota, USA, 2005, 173 pp., 42 illustrations, 8 tables. ISBN 0-89054-334-8, price: 69 USD.

The book originated from the symposium 'From molecules to ecosystems: bridging scales in forest disease concepts', held at the American Phytopathological Society Annual Convention in Montreal in 1999. The authors have expanded their presentations into a series of short review articles that address concepts and methods in molecular biology, epidemiology, selection and genetic improvement, the impact of forest disease on wildlife, and much more. The broad scope of this book is illustrated below by the titles of chapters as they clearly indicate the topics covered.

Forest pathology in the era of genomics – Application of molecular genetic tools to studies of forest pathosystems – Assessing forest-pathogen interactions at the population level – Population genetics of bark beetles and their associated blue-stain fungi with the use of molecular markers – Invasion and naturalization of terrestrial ecosystems by a host-dependent microbes – Molecular analysis of fungal pathogenesis in forest pathogens – Sapstain in trees, logs and lumber: fungi, pigment, and pigment biosynthetic pathways – Transgenic approaches to increase pathogen disease resistance in forest trees: a case study with poplar – Operational uses of disease resistance in conifer – Tree improvement programs – Forest disease impacts on wildlife: beneficial? – Impacts of diseases and other disturbances on non-timber forest resources: a case study involving small mammals – Characterizing regional forest health and sustainability – A case study using diameter distributions, baseline mortality, and cumulative liabilities – Exotic ecosystems: where root disease is not a beneficial component of temperate conifer forests – Use of spatial statistics in assessing forest diseases – Patterns in diseased landscapes: a case study of a lodgepole pine forest infected by dwarf mistletoe – Landscape pathology – Forest pathology in the era of landscape ecology – Forest pathology in the era of integration and synergy. The book is finished by a subject index and a scientific names index, which facilitate the use.

This book proves that apart from the well-developed field of agrobiotechnology there is also the fast growing and developing discipline of forest biotechnology. It also demonstrates that many genetic strategies used in pest and pathogen control in agricultural crops can be applied in forest pathology, too. It is a good review and source of recent information for mycologists studying forest pathogens like *Armillaria*, *Cronartium*, *Gremmeniella*, *Cryptonectria*, *Heterobasidion*, *Ophiostoma* and fungal saprobes causing sap stain, while some important pathogens like *Phytophthora ramorum* are mentioned only marginally. A well-organised chapter about bark beetles and their associated blue-stain fungi (by Dian L. Six) deals with the populations genetics of both partners, which is an issue summarised for the first time in recent literature. In addition, there is an interesting part (chapter 7) describing the processes involved in sap staining caused by these fungi. The book therefore supplements other recently published reviews about bark beetle associated fungi, such as 'Insect Symbiosis' (Bourtzis and Miller 2003), 'Bark and wood boring insect in living trees in Europe, a synthesis' (Lieutier et al. 2004) and 'Insect-fungal associations. Ecology and evolution' (Vega and Blackwell 2005).

The book consists of short but informative introductions to many fields of forest science and it clearly illustrates that forest pathology is not just about controlling tree diseases, but has taken on many new dimensions, cutting across many disciplines.

Miroslav Kolařík

Book Review

WŁADYSŁAW WOJEWODA [ed.]

Atlas of the geographical distribution of fungi in Poland. Fascicle 3.

W. Szafer Institute of Botany of the Polish Academy of Sciences, Kraków, 2005, 145 pp. – ISBN 83-89648-27-X.

The third fascicle of the Atlas of the geographical distribution of fungi in Poland follows the previous two ones, issued in the years 2000 and 2002. The book presents further 30 species from various systematic groups.

In the head of each chapter, the species name is supplemented not only with its basionym and commonly used synonyms, but also with its systematic position (family, order, ... up to division) according to different systems (published by various authors during the past few decades).

The text to each species contains a description (usually short, in some cases rather detailed; it is a pity that the description is not present in all chapters, missing in *Hapalopilus croceus*, *Onygena equina* or *Skeletocutis odora*), often connected with notes on its ecology, variability, etc. In some chapters, this paragraph contains also notes on or a discussion about the systematic position or taxonomic concept of the species.

The core of the text is formed by paragraphs describing occurrence (optionally with some historical remarks) and distribution of the species not only in Poland, but also at world scale – the world distribution is often very detailed by the use of many literature sources from all over the world.

The chorological part is followed by a complete list of Polish localities (including all data from herbarium labels) and somewhere also “not included localities” are added (not included due to either false identification or locality position outside today’s Poland).

The distribution in Poland is illustrated with grid maps (grid numbers of each dot/occurrence are mentioned in the list of localities); records from different historical periods (before 1900, 1901–1945 and after 1945) are differentiated in the maps. Also altitude zones are indicated, which helps to distinguish lowland from mountain species. Besides this, I have some remarks to the maps:

It is evident that the used grid is only a square grid (10 × 10 km), not corresponding with geographic coordinates (as for example the MTB grid, used in Central Europe). Any methodological chapter, where the used grid might be described, is absent from the book. In the introduction of the first fascicle, the use of the ATPOL grid was mentioned, but this information is not available for the reader of the third one.

The selected period “after 1945” is too long, as some species underwent strong occurrence changes during the past 60 years. If this period were divided (e.g. 1946–1975 and 1976–2005), these changes (and possible disappearance in some regions) could well be shown in the maps. In my opinion, this would better illustrate the real recent occurrence.

In conclusion, just like the first two fascicles, also the third one gives complete information about the distribution of mostly rare and threatened species in Poland, with details of their occurrence also outside this country. Therefore the Atlas is not only a very good contribution to the knowledge of the Polish mycoflora, but can also be used as an information source for distribution studies in the surrounding countries.

In the beginning of the first fascicle, the author wrote: “The number of species ... for a given volume ... will not be smaller than 10.” After publication of the second (26 species) and third (30 species) fascicles we can only wish the authors a lot of enthusiasm and stable financial sources to continue their work, resulting in more fascicles with other species in the next years.

List of species elaborated in the third fascicle: *Amylocystis lapponica*, *Antrrodia albobrunnea*, *Biscogniauxia repanda*, *Botryobasidium laeve*, *Clavaria zollingeri*, *Coniophora olivacea*, *Entoloma bloxamii*, *Hapalopilus croceus*, *Helicobasidium purpureum*, *Hericium erinaceum*, *Hygrocybe calyptriformis*, *Inocybe calospora*, *Leucogyrophana olivascens*, *Lycoperdon mammiforme*, *Mycenella bryophila*, *Mycenella margaritispota*, *Mycenella rubropunctata*, *Mycenella salicina*, *Oligoporus obductus*, *Onygena equina*, *Phylloporus rhodoxanthus*, *Sarcosoma globosum*, *Sarcosphaera coronaria*, *Skeletocutis odora*, *Suillus sibiricus* ssp. *helveticus*, *Tricholoma colossus*, *Veluticeps ambigua*, *Xerula melanotricha*, *Xerula pudens*, *Xerula radicata*.

Petr Hrouda